

# Urticaria and Angioedema

## Current Insights

### Salient Features of the Book

- Concise and practical book on urticaria and angioedema
- Covers recent advances in drugs and investigations
- Lays out contemporary real world practices
- Patient handouts and severity scoring sheets
- Drug summary tables
- Written by authors in institutional academic practice with extensive research experience

**Kabir Sardana** MD, DNB, MNAMS is currently Director Professor of Skin and VD, and Head, Department of Dermatology and STDs, ABVIMS and Dr RML Hospital, New Delhi. He was previously at Maulana Azad Medical College (MAMC), New Delhi, where he tenured as a Assistant Professor, Associate Professor and then Professor from 2006 to 2016. He is an alumnus of MAMC (1991-1996) and completed his MD from Lady Hardinge Medical College in 2000. He is a DNB holder and a member of the National Academy of Medical Sciences. He has been Secretary and Vice President, IADVL, Delhi branch, and Secretary, Society of Pediatric Dermatology, Delhi. He is the author of more than 270 peer-reviewed scientific publications cited on Pubmed, with a H index-28. He is a author/editor of a number of books, including *Systemic Drugs in Dermatology, Lasers and Energy Devices in Aesthetic Practice, IADVL Manual on Management of Dermatophytoses and Compendium of Dermatology for Examinations*. He is also the editor of *Jopling's Handbook of Leprosy*, 6th edn. His clinical research interests focus on acne vulgaris, dermatophytes, psoriasis, alopecia areata, pigmentary disorders, lasers in dermatological practice, hyperandrogenism and systemic drugs.



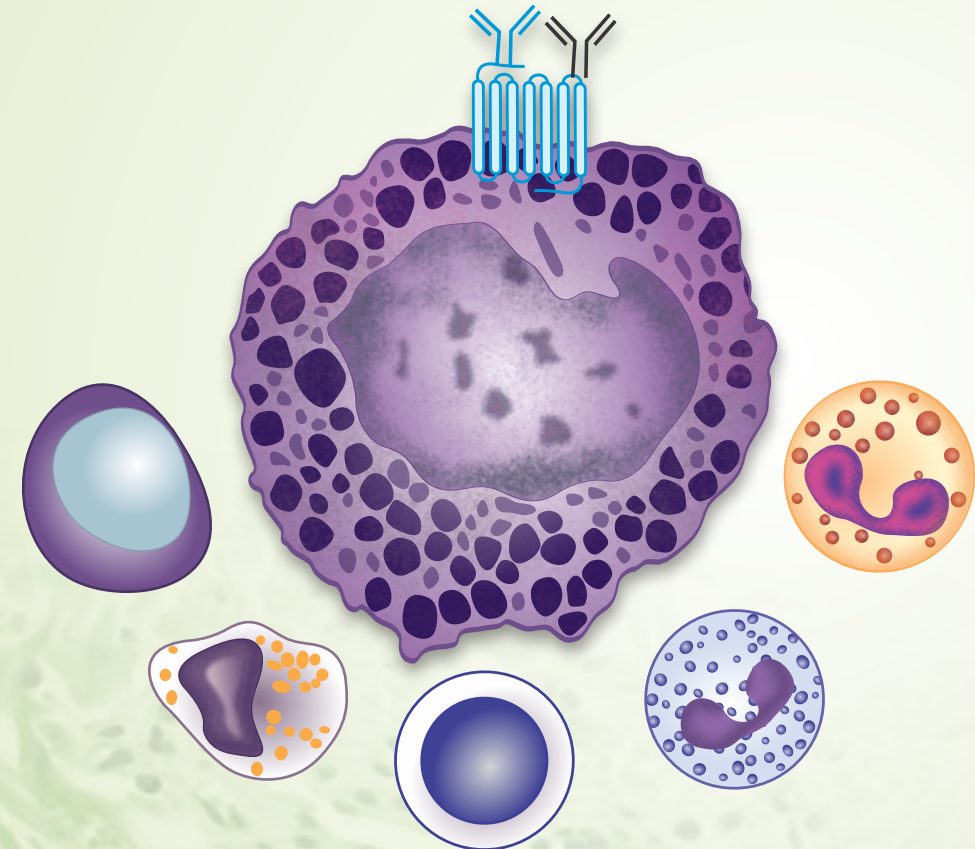
Urticaria and Angioedema Current Insights

Sardana



# Urticaria and Angioedema

## Current Insights



Kabir Sardana



Dedicated to Education  
CBS Publishers & Distributors Pvt Ltd



**CBS Publishers & Distributors Pvt Ltd**  
4819/XI, Prahlaad Street, 24 Ansari Road, Daryaganj, New Delhi 110 002, India  
E-mail: delhi@cbspd.com, cbspubs@airtelmail.in; Website: www.cbspd.com  
New Delhi | Bengaluru | Chennai | Kochi | Kolkata | Lucknow | Mumbai  
Hyderabad | Jharkhand | Nagpur | Patna | Pune | Uttarakhand



ISBN: 978-93-5466-465-6



# Urticaria and Angioedema

Current Insights

---

## **Knowledge and Illness**

Highest Knowledge consists in *Knowing that there is a Limit to Knowledge*.  
It is an Illness of Heart-and-Mind to be Ignorant and yet to claim Knowledge.  
Few have the Highest Knowledge.  
Many suffer from this Illness of Ignorance  
False Knowledge is diseased Knowledge, based on guesswork and cleverness.  
Whosoever is able to see it as an Illness can still be healed.  
The Taoist has this Power, this True Knowledge of the Tao.  
Highest Knowledge is to Attain Meaning and to forget Words.

**Tao Te Ching**  
**By**  
**Lao Tzu**

# Urticaria and Angioedema

## Current Insights

---

**Kabir Sardana** MD DNB MNAMS  
Director Professor of Skin and VD  
Head, Department of Dermatology  
ABVIMS and Dr RML Hospital  
New Delhi



**CBS Publishers & Distributors** Pvt Ltd

New Delhi • Bengaluru • Chennai • Kochi • Kolkata • Lucknow • Mumbai  
Hyderabad • Jharkhand • Nagpur • Patna • Pune • Uttarakhand

*Disclaimer*

Science and technology are constantly changing fields. New research and experience broaden the scope of information and knowledge. The author has tried his best in giving information available to him while preparing the material for this book. Although all efforts have been made to ensure optimum accuracy of the material, yet it is quite possible some errors might have been left uncorrected. The publisher, the printer and the author will not be held responsible for any inadvertent errors or inaccuracies.

## Urticaria and Angioedema

Current Insights

**ISBN:** 978-93-5466-465-6

Copyright © Author and Publisher

**First Edition: 2022**

All rights reserved. No part of this book may be reproduced or transmitted in any form or by any means, electronic or mechanical, including photocopying, recording, or any information storage and retrieval system without permission, in written, from the author and the publisher.

Published by **Satish Kumar Jain** and produced by **Varun Jain** for

**CBS Publishers & Distributors Pvt Ltd**

4819/XI Prahlad Street, 24 Ansari Road, Daryaganj, New Delhi 110 002, India

Ph: 011-23289259, 23266861, 23266867

Fax: 011-23243014

Website: [www.cbspd.com](http://www.cbspd.com)

e-mail: [delhi@cbspd.com](mailto:delhi@cbspd.com); [cbspubs@airtelmail.in](mailto:cbspubs@airtelmail.in)

*Corporate Office:* 204 FIE, Industrial Area, Patparganj, Delhi 110 092, India

Ph: 011-4934 4934

Fax: 011-4934 4935

e-mail: [publishing@cbspd.com](mailto:publishing@cbspd.com); [publicity@cbspd.com](mailto:publicity@cbspd.com)

### Branches

- **Bengaluru:** Seema House 2975, 17th Cross, KR Road, Banasankari 2nd Stage, Bengaluru 560 070, Karnataka, India  
Ph: +91-80-26771678/79 Fax: +91-80-26771680 e-mail: [bangalore@cbspd.com](mailto:bangalore@cbspd.com)
- **Chennai:** 7, Subbaraya Street, Shenoy Nagar, Chennai 600 030, Tamil Nadu, India  
Ph: +91-44-26680620, 26681266 Fax: +91-44-42032115 e-mail: [chennai@cbspd.com](mailto:chennai@cbspd.com)
- **Kochi:** 42/1 325, 1326, Power House Road, Opp KSEB, Power House, Ernakulum Kochi 682 018, Kerala, India  
Ph: +91-484-4059061-65,67 Fax: +91-484-4059065 e-mail: [kochi@cbspd.com](mailto:kochi@cbspd.com)
- **Kolkata:** 147, Hind Ceramics Compound, 1st Floor, Nilgunj Road, Belghoria, Kolkata 700 056, West Bengal, India  
Ph: +91-33-25633055/56 e-mail: [kolkata@cbspd.com](mailto:kolkata@cbspd.com)
- **Lucknow:** Basement, Khushnuma Complex, 7 Meerabai Marg (behind Jawahar Bhawan), Lucknow 226 001, UP, India  
Ph: +91-522-4000032 e-mail: [tiwari.lucknow@cbspd.com](mailto:tiwari.lucknow@cbspd.com)
- **Mumbai:** PWD Shed, Gala no. 25/26, Ramchandra Bhatt Marg, Next to JJ Hospital Gate no. 2, Opp. Union Bank of India, Noorbaug, Mumbai 400 009, Maharashtra, India  
Ph: +91-22-66661880/89 e-mail: [mumbai@cbspd.com](mailto:mumbai@cbspd.com)

### Representatives

- |                    |              |                    |              |                      |              |
|--------------------|--------------|--------------------|--------------|----------------------|--------------|
| • <b>Hyderabad</b> | 0-9885175004 | • <b>Jharkhand</b> | 0-9811541605 | • <b>Nagpur</b>      | 0-9421945513 |
| • <b>Patna</b>     | 0-9334159340 | • <b>Pune</b>      | 0-9623451994 | • <b>Uttarakhand</b> | 0-9716462459 |

Printed at: Nutech Print Services (India) Faridabad, Haryana, India

to

---

*My Parents, Friends, Foes, Critics, Colleagues  
and  
Students*

*The patients who teach us more than books*

*All the researchers who are working on urticaria*

*The wonderful complexities of nature that made a cell with  
so many receptors and interactions that still defy a perfect  
therapeutic intervention for urticaria*

*“The mast cell”*

*The never ending peace and tranquillity of Defence Colony, Dehradun*



# Contributors

## **Akhilesh Thole** MBBS DNB

Medical Officer  
Department of Dermatology and STDs  
PGIMER, Dr Ram Manohar Lohia Hospital, New Delhi

## **Amiya Kumar Mukhopadhyay**

MD PhD DNB (Derm) DNB (Derm & Vener) MNAMS  
Consultant Dermatologist  
Independent Researcher, History of Dermatology  
Asansol, West Bengal, India

## **Ananta Khurana** MD DNB MNAMS

Professor  
Department of Dermatology and STDs  
PGIMER, Dr Ram Manohar Lohia Hospital, New Delhi

## **Anita Kulhari** MD

Consultant Dermatologist  
Max Smart Superspeciality Hospital, Saket

## **Kabir Sardana**

MD DNB MNAMS  
Director Professor of Skin and VD  
Head, Department of Dermatology  
ABVIMS and Dr RML Hospital, New Delhi

## **Rashmi Agarwal**

MD FRGUHS (Pediatric Dermatology)  
Consultant Pediatric Dermatologist  
Cutis Academy of Cutaneous Sciences  
Bengaluru, Karnataka

## **Sahana M Srinivas**

DNB DVD FRGUHS (Pediatric Dermatology)  
Consultant Pediatric Dermatologist  
Department of Pediatric Dermatology  
Indira Gandhi Institute of Child Health  
Bengaluru, Karnataka

## **Seema Rani** MD

Professor  
Department of Dermatology and STDs  
PGIMER, Dr Ram Manohar Lohia Hospital, New Delhi

## **Snigdha Saxena** MD DNB

Senior Resident  
Department of Dermatology and STDs  
PGIMER, Dr Ram Manohar Lohia Hospital, New Delhi

## **Soumya Sachdeva** MD DNB

Senior Resident  
Department of Dermatology and STDs  
PGIMER, Dr Ram Manohar Lohia Hospital, New Delhi





# Preface

Urticaria is a common disorder which suffers from a few issues. During dermatology training, postgraduate students rarely study it, as it is not an exam case! Hence, most tend to take the industry advice and write the prevalent “new drug”. Very few institutes research on it and mostly we are “trying to reinvent the wheel”. And the research has now firmly focused on mast cells, with multiple new drugs but no cure in sight. Firstly, it is unclear what is the cause in the chronic cases and also why certain patients develop an autoimmune stimulation of the mast cells, is a mystery. The industry trials are focused on the “new kid on the block” with little good quality head-to-head studies. No drug has been able to surpass omalizumab and at the moment none seems likely. But on the flip side, a large number of patients are controlled on antihistamines.

There are many issues with the disorder and this book is targeted at the practising doctor and has many real life advices on drugs, triggers, investigations and interventions. I have covered angioedema and also looked at anaphylaxis which should be known to any practising dermatologist. I have covered the role of food and diet which may be of use in certain patients. The appendix has patient handouts and dietary measures apart from severity scales.

The book was supposed to be launched before the Covid era but got caught up in the delays of the Covid period. Luckily, numerous novel drugs have been discovered as has been a new sub-type of CSU, amongst a range of biomarkers.

The book is intended as update into many aspects of urticaria and angioedema and I hope it is of practical use to the clinicians who read it.

I am thankful to Mr SK Jain CMD, Mr Varun Jain Director, Mr YN Arjuna Senior Vice-President—Publishing, Editorial and Publicity, Mrs Ritu Chawla GM—Production and Mr SK Verma Vice-President—Marketing and Operations. Here, I must acknowledge the effort of the great team of CBS, with a special thanks to the diligence and perseverance of the dedicated reformatting by operator Mrs Jyoti Kaur, Mr Vikrant Sharma, the artists Mrs Baljeet Kaur and Mr Neeraj Prasad, readers Mr Surendra Jha, Mr Kshirod Sahoo and Mr Neeraj Sharma.

I also thank my contributors who have put in their knowledge into their contributions.

*Happy Reading*

**Kabir Sardana**



# List of Important Figures, Flowcharts and Tables

---

- Table 2.2:** Overview of the pathogenetic aspects of urticaria
- Fig. 4.1:** A depiction of the salient features of anaphylaxis
- Table 4.5:** Overview of management of anaphylaxis
- Fig. 5.3:** Classification of biologics for the use in chronic spontaneous urticaria
- Fig. 5.5:** Omalizumab: Mechanisms of action
- Table 6.1:** A low pseudoallergen/low histamine diet
- Box 6.1:** Low-histamine diet (list of allowed food)
- Table 7.3:** Overview of treatment options for physical urticaria
- Table 8.3:** Oral second-generation H<sub>1</sub>-antihistamines licensed for pediatric use
- Flowchart 9.2:** Classification of AE without wheals
- Flowchart 9.3:** Management of angioedema in an emergency room
- Flowchart 9.4:** Approach to investigation of a suspect case of hereditary angioedema
- Flowchart 9.5:** Therapeutic approach to angioedema
- Fig. 10.2:** The autoinflammatory penumbra
- Table 10.4:** Clinical difference between chronic urticaria and autoinflammatory syndrome
- Table 11.3:** A list of investigations that serve as severity markers of CSU
- Box 12.1:** Salient pharmacology of second generation AH
- Table 12.4:** Dosimetry of select antihistamines
- Table 12.6:** Special scenarios
- Fig. 12.6:** Site of action of novel drugs in chronic urticaria
- Table 12.7:** An overview of the salient biological drugs in CSU
- Fig. 13.1:** Treatment algorithm suggested by EAACI/GA<sup>2</sup>LEN/EuroGuiDerm/APAAACI GROUP
- Flowchart 13.1:** Treatment algorithm suggested by the British Academy of Dermatologists for chronic spontaneous and inducible urticarias
- Table 14.1:** List of alternative agents for CSU
- Fig. 14.2:** Management of patients with CSU



# Contents

<i>Contributors</i>	<i>vii</i>
<i>Preface</i>	<i>ix</i>
<b>1. Urticaria: Historical Aspects</b>	1
<i>Amiya Kumar Mukhopadhyay</i>	
<b>2. Classification and Overview of Urticaria</b>	7
<i>Kabir Sardana</i>	
<b>3. Etiopathogenesis of Chronic Urticaria</b>	13
<i>Snigdha Saxena, Ananta Khurana, Kabir Sardana, Anita Kulhari</i>	
<b>4. Acute Urticaria and Anaphylaxis</b>	25
<i>Akhilesh Thole, Kabir Sardana</i>	
<b>5. Chronic Urticaria: Diagnosis and Management</b>	37
<i>Ananta Khurana</i>	
<b>6. Food and Chronic Urticaria</b>	65
<i>Kabir Sardana</i>	
<b>7. Physical and Inducible Urticarias</b>	71
<i>Ananta Khurana</i>	
<b>8. Pediatric Urticaria</b>	89
<i>Sahana M Srinivas, Rashmi Agarwal</i>	
<b>9. Angioedema: Diagnosis and Management</b>	98
<i>Kabir Sardana</i>	
<b>10. Autoinflammatory Diseases and Urticarial Vasculitis</b>	113
<i>Kabir Sardana</i>	
<b>11. Investigations and Diagnosis of Urticaria</b>	126
<i>Anita Kulhari, Seema Rani, Kabir Sardana</i>	

<b>12. Treatment</b>	136
<i>Kabir Sardana, Soumya Sachdeva, Ananta Khurana</i>	
A. Antihistamines—Pharmacology, Doses and Special Scenarios	
B. Novel Drugs including Biologicals	
<b>13. Comparison of Guidelines of Chronic Urticaria</b>	167
<i>Ananta Khurana</i>	
<b>14. Authors' Approach to the Treatment of Chronic Spontaneous Urticaria</b>	174
<i>Kabir Sardana</i>	
<b>Appendices</b>	
<i>Appendix 1: Patient Handout 182</i>	
<i>Appendix 2: Scores Used in Chronic Spontaneous Urticaria: AAS, DLQI, CU-Q2oL, Urticaria Control Test 184</i>	
<i>Appendix 3: Food Avoidance Diets 191</i>	
<b>Index</b>	193